README

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How to Start

```
1   # Make sure you have installed dnslib
2   # pip install dnslib
3
4   # Public DNS
5   python main.py
6   # or
7   python main.py -F 0
8
9   # Iterative Searching
10  python main.py -F 1
11
12  # Maybe also use python3 to substitute python on some machines
```

Then go to another window

```
1   dig www.example.com @127.0.0.2 -p 12345
2   dig www.baidu.com @127.0.0.2 -p 12345
3
4   # Test cache, should be return in 0ms
5   dig www.example.com @127.0.0.2 -p 12345
6
7   # You could also change listening address and port in source code.
8   # Cache will expire in cordance of TTL, you could also find a server to test it.
```

Expected returns, respectively.

Note: Pay attention to the python program window, as some IP address returned by the root server and TLDs could not be reached, which leads to the `Timeout Error`.

```
1   ; <<>> DiG 9.18.19-1~deb12u1-Debian <<>> www.example.com @127.0.0.2 -p 12345
2   ;; global options: +cmd
3   ;; Got answer:
4   ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 11671
5   ;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 0
6
7   ;; QUESTION SECTION:
8   ;www.example.com.                 IN      A
9
10  ;; ANSWER SECTION:
11  www.example.com.         86400   IN      A       93.184.216.34
12
13  ;; Query time: 1219 msec
14  ;; SERVER: 127.0.0.2#12345(127.0.0.2) (UDP)
15  ;; WHEN: Sun Oct 15 16:33:56 CST 2023
```

```
16  ;; MSG SIZE  rcvd: 49
```

```
1   ; <<>> DiG 9.18.19-1~deb12u1-Debian <<>> www.baidu.com @127.0.0.2 -p 12345
2   ;; global options: +cmd
3   ;; Got answer:
4   ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 25065
5   ;; flags: qr aa rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 0
6
7   ;; QUESTION SECTION:
8   ;www.baidu.com.                  IN      A
9
10  ;; ANSWER SECTION:
11  www.baidu.com.          1200    IN      CNAME    www.a.shifen.com.
12  www.a.shifen.com.       120     IN      A        157.148.69.74
13  www.a.shifen.com.       120     IN      A        157.148.69.80
14
15  ;; Query time: 709 msec
16  ;; SERVER: 127.0.0.2#12345(127.0.0.2) (UDP)
17  ;; WHEN: Sun Oct 15 16:34:37 CST 2023
18  ;; MSG SIZE  rcvd: 90
```

```
1   ; <<>> DiG 9.18.19-1~deb12u1-Debian <<>> www.example.com @127.0.0.2 -p 12345
2   ;; global options: +cmd
3   ;; Got answer:
4   ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 47940
5   ;; flags: qr aa rd ra ad; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 0
6
7   ;; QUESTION SECTION:
8   ;www.example.com.                IN      A
9
10  ;; ANSWER SECTION:
11  www.example.com.        86400   IN      A        93.184.216.34
12
13  ;; Query time: 0 msec
14  ;; SERVER: 127.0.0.2#12345(127.0.0.2) (UDP)
15  ;; WHEN: Sun Oct 15 16:34:52 CST 2023
16  ;; MSG SIZE  rcvd: 49
```